



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,858	09/19/2001	Yujin Arai	01589/LH	9888

1933 7590 05/05/2006

FRISHAUF, HOLTZ, GOODMAN & CHICK, PC
220 Fifth Avenue
16TH Floor
NEW YORK, NY 10001-7708

EXAMINER

FORMAN, BETTY J

ART UNIT	PAPER NUMBER
----------	--------------

1634

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/955,858

Applicant(s)

ARAI, YUJIN

Examiner

BJ Forman

Art Unit

1634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 1634

FINAL ACTION

Status of the Claims

1. This action is in response to papers filed 10 February 2006 in which claims 10-11, 14-18 were amended and claims 19-21 were added. All of the amendments have been thoroughly reviewed and entered.

The previous rejections in the Office Action dated 27 September 2005 under 35 U.S.C. 112, second paragraph are withdrawn in view of the amendments. The previous rejections under 35 U.S.C. 102(b) and 35 U.S.C. 103(a) withdrawn in view of the amendments. Applicant's arguments have been thoroughly reviewed but are deemed moot in view of the amendments, withdrawn rejections and new grounds for rejection. New grounds for rejection, necessitated by the amendments, are discussed.

The examiner for this application has changes. Please address future correspondence to Examiner BJ Forman, Art Unit: 1634.

Claims 10-21 are under prosecution.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 10-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Art Unit: 1634

The recitation measuring a light “amount” and “measured value of the light amount” is added to the newly amended claims. However, the specification does not teach or describe measuring a light amount or value. Applicant has not pointed to any support within the disclosure for the added limitation and a review of the specification reveals no such support. Therefore, the specification fails to define or provide any disclosure to support the newly added claim limitations.

MPEP 2163.06 notes “If NEW MATTER IS ADDED TO THE CLAIMS, THE EXAMINER SHOULD REJECT THE CLAIMS UNDER 35 U.S.C. 112, FIRST PARAGRAPH - WRITTEN DESCRIPTION REQUIREMENT. *IN RE RASMUSSEN*, 650 F.2D 1212, 211 USPQ 323 (CCPA 1981).” MPEP 2163.02 teaches that “Whenever the issue arises, the fundamental factual inquiry is whether a claim defines an invention that is clearly conveyed to those skilled in the art at the time the application was filed...If a claim is amended to include subject matter, limitations, or terminology not present in the application as filed, involving a departure from, addition to, or deletion from the disclosure of the application as filed, the examiner should conclude that the claimed subject matter is not described in that application.” MPEP 2163.06 further notes “WHEN AN AMENDMENT IS FILED IN REPLY TO AN OBJECTION OR REJECTION BASED ON 35 U.S.C. 112, FIRST PARAGRAPH, A STUDY OF THE ENTIRE APPLICATION IS OFTEN NECESSARY TO DETERMINE WHETHER OR NOT “NEW MATTER” IS INVOLVED. *APPLICANT SHOULD THEREFORE SPECIFICALLY POINT OUT THE SUPPORT FOR ANY AMENDMENTS MADE TO THE DISCLOSURE*” (emphasis added).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 21 is rejected under 35 U.S.C. 102(b) as being anticipated by Tuhro et al.(US Patent 4,471,386).

Regarding claim 21, Tuhro et al. disclose a method of acquiring image data from a sample having a plurality of spots (e.g. letters), wherein the sample is divided into a plurality of scanning regions having a boundary, and the scanning regions each have a predetermined size (i.e. line Col. 2 lines 61-68), the method comprising the steps of: scanning a first scanning

Art Unit: 1634

region acquire image data (image signals are output to e.g. memory, Column 3, lines 31-36), with a phase linear scanning array (Col. 3 lines 7-9); comparing brightness of a final line with a threshold (Claim 1, (b)-(d) and storing the image when below a threshold (Claim 1 (d) and scanning and a second scanning region that is adjacent to the first scanning region(Claim 1 steps (d) (e), and (f)).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 10-12, 14-18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuhro et al.(US Patent 4,471,386) in view of Breish (U.S. Patent No. 5,845,018, issued 1 December 1998).

Regarding claim 10, Tuhro et al. disclose a method of acquiring image data from a sample having a plurality of spots (e.g. letters), wherein the sample is divided into a plurality of scanning regions having a boundary, and the scanning regions each have a predetermined size (i.e. line Col. 2 lines 61-68), the method comprising the steps of: scanning a first scanning region acquire image data (image signals are output to e.g. memory, Column 3, lines 31-36), with a phase linear scanning array (Col. 3 lines 7-9);measuring light on a boundary between the first scanning region and a second scanning region that is adjacent to the first scanning region(Claim 1 steps (d) (e), and (f)), and moving the boundary inside the first scanning region

Art Unit: 1634

based on the measured value (Claim 1 steps (f)- (h)). Tuhro et al do not specifically teach moving the boundary in a direction of first region. However, boundary movement was known and routinely practiced in the art at the time the claimed invention was made as taught by Breish who teaches that region boundaries are moved so that proper boundary data can be stored for each image and subsequent scanning will be correlated with proper boundary data allowing for accurate high speed and high resolution scanning (Column 5, lines 1-52). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the boundary movement of Breish to the scanning of Tuhro et al for the expected benefit of accurate high speed and high resolution scanning as taught by Breish (Column 5, lines 28-52).

Regarding claim 11, Tuhro et al teach a method which includes plurality image data acquisition comprising scanning a sample of originally printed characters, which includes a plurality of spots and furthermore a plurality of spots that emit light as they are made from a retro-reflective material(60, 61, Col. 3 lines 44-63) that are arranged on a substrate of the sample, and the moving includes moving the boundary between spot lines(Col. 4 lines 35-43)

Regarding claims 12, 16 and 17 Tuhro et al. teaches the method comprising irradiating light onto the scanning region and measuring light from the region wherein the light is reflection light, transmission light, scattered light or fluorescence(Col. 3 lines 44-63).

Regarding claim 14, Tuhro et al teaches the above method wherein the moving includes moving the boundary when intensity of the measured light is higher than a predetermined threshold(Col. 5 lines 3-35 e.g. other marking arrangements and configurations may be contemplated”).

Regarding claim 15, Tuhro et al. teach the method further comprising acquiring scanned image data with the measured light within the first scanning region(Claim 1 for example) scanning the second scanning region to measure the light from the sample, the second scanning region having the boundary moved inside the first scanning region(Lines 45-5

Art Unit: 1634

bridging Col. 5-6); acquiring scanned image data with the measured light within the second scanning region; and(Col. 5 lines 3-35) and storing the image data (Column 3, lines 31-36).

Regarding claim 18, Tuhro teaches the step of scanning to include moving the sample in their teaching that “a document feed roll 34 is provided to advance the document 18 to be scanned”(Col. 2 lines 48-53).

Regarding Claim 19, Breish teaches the method wherein moving the boundary occurs when light indicates the presence of at least one spot on the boundary (Column 5, lines 25-27).

Regarding Claim 20, Breish teaches the method comprising storing the image date of the scanned region and processing the data in parallel with the next region scanning (Claim 1).

8.. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tuhro et al.(US Patent 4,471,386) in view of Rava et al.(US Patent 5,874,219 issued 23 February 1999).

Regarding claim 10, Tuhro et al. disclose a method of acquiring image data from a sample, wherein the sample is divided into a plurality of scanning regions, and the scanning regions each have a predetermined size(See Col. 2 lines 61-68), the method comprising the steps of: scanning a first scanning region to measure light from the sample with a phase linear scanning array(Col. 3 lines 7-9);

measuring light on a boundary between the first scanning region and a second scanning region that is adjacent to the first scanning region(Claim 1 steps (d) (e), and (f)), and moving the boundary inside the first scanning region(Claim 1 steps (f)- (h)).

Regarding claim 11, Tuhro et al teach a method which includes plurality image data acquisition comprising scanning a sample of originally printed characters, which includes a plurality of spots and furthermore a plurality of spots that emit light as they are made from a retro-reflective material(60, 61, Col. 3 lines 44-63) that are arranged on a substrate of the sample, and the moving includes moving the boundary between spot lines(Col. 4 lines 35-43)

Art Unit: 1634

Regarding claims 12, 16 and 17 Tuhro et al. teaches the method wherein the light is reflection light, transmission light, scattered light or fluorescence(Col. 3 lines 44-63).

Tuhro et al. do not teach the above method of image data acquisition wherein the sample is a DNA microarray.

However, Rava et al. disclose a method of image data acquisition comprising scanning a sample, which includes a plurality of spots(Col. 2 lines 3-6) on a substrate with a light beam(Col. 6 lines 5-10); acquiring scanned image data by receiving a light from the sample, and sequentially storing the acquired scanned image data; and storing the scanned image data obtained by scanning a region(defined in specification as “strip”) of a predetermined size every time a region scanned by the light reaches a predetermined size(ie. a “strip”), sequentially (Column 5 lines 45-56, Column 6 lines 40-53). Rava et al. disclose the image data acquisition method above wherein, the size of the scanned region by the light is changed according to an arrangement position thereof, when a plurality of measurement objects are arranged in the sample(Claims 16(b) and Claim 34(b)). Rava et al. teach in the cited claims that the size of the scanned region is changed through “the means for focusing the excitation light to a point on a substrate”(Clm 34) and further by using the “optics for directing an excitation light”(Clm 16).

Specifically regarding claim 13, Rava et al. disclose the image data acquisition method according to claim 10, wherein the sample is a DNA microarray in which a plurality of spots are arranged as a measurement object, and the size of the scanning region(strip) is such that a boundary in the scanning region is not overlapped on the spot(Column 6 lines 49-50, Column 12 lines 1-9). In referencing the specification on page 18, it appears that “boundary” is meant to define the outer edges of the region(strip) and as a result this claim’s embodiment is taught in Rava et al.’s teaching that in their method, “a strip has been scanned”(Col. 6). Applicant should note that since only a strip has been scanned, a boundary in the scanning region is not overlapped on the spot as the boundary is understood to exist outside the spots and in this

Art Unit: 1634

example each strip(region including spots) is scanned; not a strip and a spot, or not spots overlapping the strip boundary.

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the DNA based, parallel processing analysis of Rava et al. to the image acquisition method of Tuhro et al. for the expected benefit of “continuously integrated and processing data”(Rava et al. Col. 6, lines 40-53) which would be “advantageous in settings in which large amounts of information are required quickly, such as in clinical diagnostic laboratories or in large-scale undertakings such as the Human Genome Project”(Rava et al. Col. 1 lines 52-58).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (571) 272-0741. The examiner can normally be reached on 6:00 TO 3:30.

Art Unit: 1634

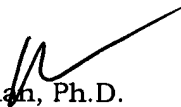
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.



BJ Forman, Ph.D.
Primary Examiner
Art Unit: 1634
April 20, 2006